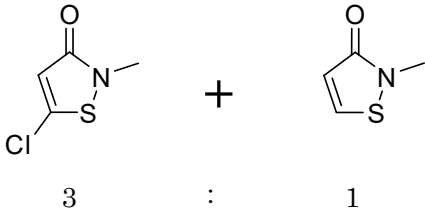


# 皮膚障害物質データシート

Methylchloroisothiazolinone/Methylisothiazolinone Mixture ; CMI/MI

化学構造式 (Structure)	 <p>3 : 1</p>
化学物質名 (Generic Name)	<p>5-Chloro-2-methyl-4-isothiazolin-3-one (CMI) + 2-Methyl-4-isothiazolin-3-one (MI) 3:1 Mixture ; CMI/MI Methylchloroisothiazolinone/Methylisothiazolinone Mixture ; CMI/MI 5-クロロ-2-メチル-4-イソチアゾリン-3-オン + 2-メチル-4-イ ソチアゾリン-3-オン</p>
元素組成、分子量 (Molecular Formula, Molecular Weight)	<p>CMI ; C<sub>4</sub>H<sub>4</sub>ClNOS = 149.59 MI ; C<sub>4</sub>H<sub>5</sub>NOS = 115.15</p>
NITE-CHRIP ID	<p>CMI+MI mixture ; 未登録 CMI ; C005-894-39A MI ; C005-842-63A</p>
用途 (Use, Activity)	<p>抗菌防臭剤、殺菌剤</p>

## 化合物情報、皮膚障害情報

イソチアゾリノンミックスは、5-Chloro-2-methyl-4-isothiazolin-3-one (CMI) と 2-Methyl-4-isothiazolin-3-one (MI) を 3:1 の割合で含む混合物 (CMI/MI) である。アレルギー名としては、Methylchloroisothiazolinone/Methylisothiazolinone (CMI/MI) が主に用いられている。

CMI/MI は、欧州では 1980 年代からアレルギー性接触皮膚炎が多発(1-31)し、化粧品では規制された(32)。

CMI/MI は、防腐効果が高いため、塗料、洗浄剤、接着剤、冷却水、ウェットティッシュの抗菌剤としても用いられていた。

日本では、冷却タオルによるアレルギー性接触皮膚炎の問題があり、国民生活センターが報道発表している。

2013年日本で冷却タオルによるアレルギー性接触皮膚炎が発生した。原因究明テストの結果、事故品の未使用の冷却タオルから CMI、MI が検出され、CMI/MI が使用されていたことが確認された。被害者に対するパッチテストで CMI のみが陽性反応（CMI 0.01%aq ++、(33)）を示したことから CMI/MI の CMI がアレルギー性接触皮膚炎の原因物質として確認された(33)。

CMI/MI は、水溶性であり、脂溶性である 4,5-Dichloro-2-n-octyl-4-isothiazolin-3-one (DCOIT) 及び 2-n-Octyl-4-isothiazolin-3-one (OIT) とは防腐剤、抗菌剤としての対象の用途が分かれている。

MI、CMI、DCOIT、OIT 等の 4-イソチアゾリン-3-オン構造を持つ類似の化学物質は、感作物質として知られており、それぞれに交差反応の特長がある(図-1)(33-46)。

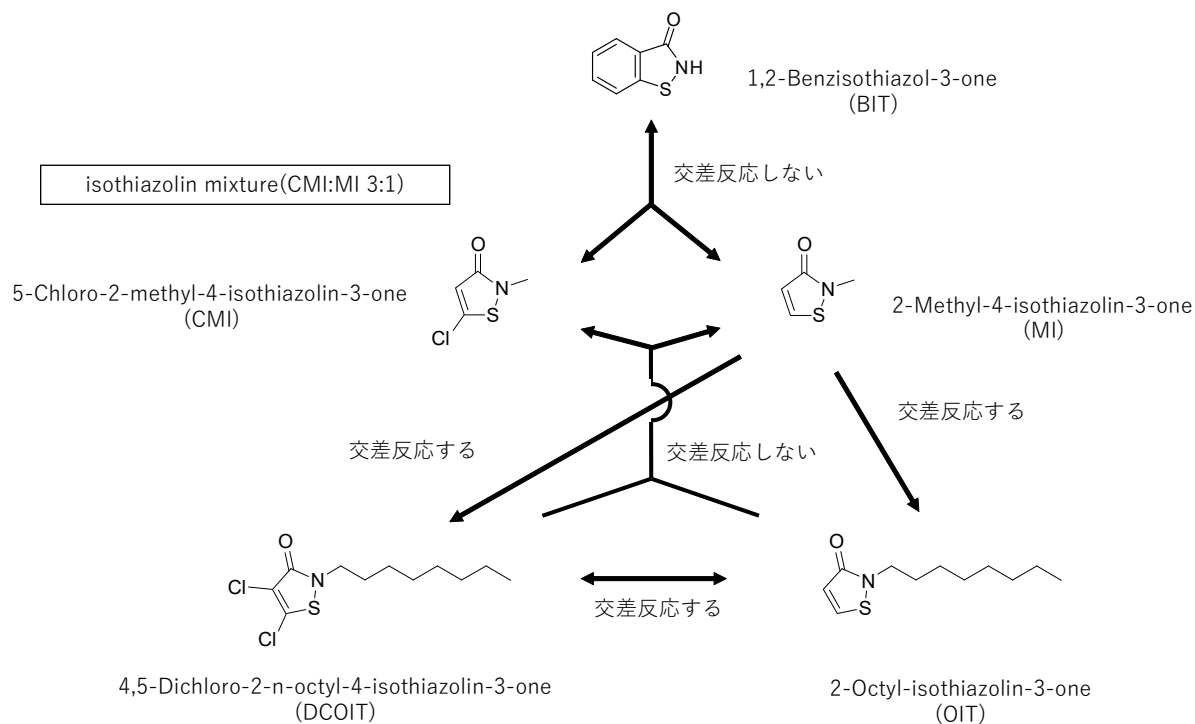


図-1 4-イソチアゾリン-3-オン系防腐剤・抗菌剤の交差反応

MI 及び CMI/MI のパッチテストの陽性率は、MIの方が陽性率が高い傾向がある。これは、MIに感作されている人の割合が高いとする一方、CMI/MIに陽性反応を示さない人もいることによる。CMI/MIが0.02%aqでパッチテストを施行するのに対して、MIは、0.2%aqでパッチテストしているため、濃度差があるとの指摘もあるが、現状では、CMI/MIは、CMIの感作を検出しており、MIとCMIは、交差反応ではなく、異なるアレルギーの反応を検出しているとされている。よって、欧州ではMIとCMI/MIを同時にパッチテストを施行している。MIとCMIの反応性の違いは、核磁気共鳴装置(NMR)を用いた分析でも確認された(46)。MIとCMIは、異なる反応によるものと考えるとMI、CMIと他

のイソチアゾリン化合物との交差反応性の違い（図－１）の原因と考えることもできる。

CMI/MI は、動物実験の結果、強感作物質とされた(48,49)。リスク評価も行われ、感作最低濃度が求められている(50)。

MI、CMI/MI は、強感作物質とされたため、1,2-Benzisothiazolin-3-one (BIT)に変更する動きがある(51)。しかし、BIT にも感作性があるため今後の動向に注意する必要がある(51,52)。

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